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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
PENDLETON, BRIAN T	

ART UNIT	PAPER NUMBER
2615	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/784,569	ARUN, UMA	
	Examiner	Art Unit	
	Brian T. Pendleton	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 January 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21 and 23-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21 and 23-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 1/6/06 have been fully considered but they are not persuasive.

Applicant alleges that there is no motivation to combine Cairns and Schubert with respect to claim 21 because Cairns teaches away from the combination. Examiner disagrees with that assertion. Paragraph 12 of Cairns suggests that the parameters of the noise reduction algorithm are determined based on vehicle conditions. The vehicle conditions are related to the mechanical condition of the vehicle, the conditions indirectly predicting a noise field within the vehicle. Applicant points to the Cairns teaching that characteristics not related to the mechanical condition of the vehicle are excluded. While this point is correct, a road input relates to the mechanical condition of a vehicle. The condition of a road directly relates to the noise level heard inside a vehicle driving on that road. For example, a bumpy city street naturally sounds more noisy that a smooth highway. Therefore a road input predicts a noise field with a vehicle. The only condition that Cairns teaches away from is direct measurement of the ambient noise level. The purpose of Cairns is to *indirectly* predict noise. As a result, it is proper to combine Cairns with a reference, such as Schubert, which suggests the use of an indirect measurement (road bumpiness) for modifying a noise reduction algorithm. With regard to the rejection of claim 26, Schubert teaches changing the noise reduction algorithm according to road bumpiness, wherein road bumpiness defines a type of road input.

Applicant also alleges that there was no motivation to combine Stankewitz with Schubert. Examiner disagrees. Stankewitz was directed to noise suppression and modifying a noise

suppression algorithm based on a vehicle operating parameters. One of ordinary skill in the art of noise suppression in vehicles would have known the operating parameters of a vehicle that determine the noise content inside the vehicle. The type of road on which the vehicle is traveling in one such operating parameter that could be realized without undue experimentation, as one would have known that bumpy roads have more noise that smooth roads --- it is common sense and suggested in Schubert. Therefore, it was obvious to combine Schubert which teaches changing a noise suppression algorithm according to a road input with Stankewitz, which taught modifying a noise suppression algorithm according to a vehicle operating parameter. The fact that the references have different classification has no bearing on their appropriateness for combining. They are both directed to noise suppression.

Applicant traverses the rejection of dependent claim 24, particularly pointing out paragraph 5 in Stankewitz that suggests that major technological or computational expense is not needed. Such a statement is not compelling enough to indicate that Stankewitz teaches away from using a road input as a type of vehicle parameter. The principle of operation of Stankewitz would not be destroyed. The same argument holds for the rejection of dependent claims 23 and 27.

With regard to the Examiner's statement in the previous Office Action, "claims 28, 30, 33, 35, and 36 are met", the limitations found in those claims are indeed supported by the combination of Cairns, Schubert, and Grivas. It was the Examiner's mistake that the list of claims rejected by the combination was not included in the first line of the rejection paragraph, however the rejection is maintained. The word "met" refers to the claims being rejected (the cited art references meet the claim limitations).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 21 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cairns in view of Schubert, US Patent 6,898,501. Cairns discloses a method and apparatus of tuning a hands-free system comprising hands-free adapter 30, noise reduction control device 40, microphone array 14 and mobile unit 20. As shown in figure 3, vehicle conditions and detected and noise parameters based on vehicle conditions are used to modify a noise reduction algorithm. Cairns does not disclose that the vehicle condition inputs include at least one road input based on global position coordinates. Schubert disclose a vibration reduction system for a vehicle comprising controller 200, vehicle control system 250 which has a positioning control system 256. Vehicle inputs such as tool usage, steering, speed, etc. are used by the controller to accomplish vibration control. Positioning control system 256 comprises positioning control circuit 300 which is coupled to GPS system 328. The global position coordinates along with geographical information from map 350 is used to generate a road input (bumpiness). As taught in column 18 lines 32-37, the vibration control system (ACS 26) changes its algorithm based on the level of bumpiness (which is a physical and mechanical condition of a vehicle). Thus, Schubert discloses receiving at least one road input based on global position coordinates. It would have been obvious to one of ordinary skill in the art at the time of invention to implement the global positioning system and geographical information map taught by Schubert in the

invention of Cairns for the purpose of improving the performance of the noise reduction control device 40 since it was suggested to use vehicle conditions which relate to its physical and mechanical condition. Claim 21 is met. As to claim 26, obviously a change in global coordinates which results in a road type (bumpiness) change (determined by geographical information map 350), would adjust the noise suppression algorithm appropriately.

Claims 23 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cairns in view of Schubert as applied to claim 21 above, and further in view of Venkatesh et al, US Patent 6,674,865. The combination of Cairns and Schubert does not disclose that the vehicle condition inputs includes an external vehicle climate input based on weather outside the vehicle. Venkatesh discloses a volume control system. In column 2 lines 15-27, it was suggested that noise reduction using a filter in a vehicle depends on road surface and weather. Therefore Venkatesh discloses a vehicle input for a noise reduction algorithm can be based on an external vehicle climate input. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the combination of Cairns and Schubert by implementing an external climate condition input which is based on weather outside of the vehicle (as taught by Venkatesh) as a vehicle input to the noise reduction control device 40 for the purpose of further improving the noise reduction capabilities of the hands-free unit. One would have been motivated to use external climate since it relates to a physical condition of the vehicle.

Claims 21 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stankewitz, US Patent Application Publication 2004/0142672 in view of Schubert. In the figure, Stankewitz discloses a method for suppressing noise for a hands-free phone in a motor vehicle comprising receiving a plurality of vehicle conditions via a communication bus (step 11),

creating a noise parameter based on the conditions (step 12) and adjusting a noise suppression algorithm based on the noise parameter (step 14). Stankewitz does not disclose that the vehicle condition inputs include at least one road input based on global position coordinates. Schubert disclose a vibration reduction system for a vehicle comprising controller 200, vehicle control system 250 which has a positioning control system 256. Vehicle inputs such as tool usage, steering, speed, etc. are used by the controller to accomplish vibration control. Positioning control system 256 comprises positioning control circuit 300 which is coupled to GPS system 328. The global position coordinates along with geographical information from map 350 is used to generate a road input (bumpiness). As taught in column 18 lines 32-37, the vibration control system (ACS 26) changes its algorithm based on the level of bumpiness (which is a physical and mechanical condition of a vehicle). Thus, Schubert discloses receiving at least one road input based on global position coordinates. It would have been obvious to one of ordinary skill in the art at the time of invention to implement the global positioning system and geographical information map taught by Schubert in the invention of Stankewitz for the purpose of improving the performance of the noise suppression. Claim 21 is met. As to claim 26, obviously a change in global coordinates which results in a road type (bumpiness) change (determined by geographical information map 350), would adjust the noise suppression algorithm appropriately.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stankewitz in view of Schubert as applied to claim 21 above, and further in view of Tomisawa et al, US Patent 5,850,458. The combination of Stankewitz and Schubert does not disclose an audio-device input based on the type and intensity of the ambient noise as a vehicle condition input. In figure 7, Tomisawa et al disclose a method of noise suppression in a vehicle comprising microphone 46,

air flow meter 10, crank angle sensor 11, throttle sensor 12, and temperature sensor 13, the meter, and sensors representing vehicle condition inputs. The CPU 9 computes a control signal for output through speaker 45 for controlling the noise level in the vehicle. Thus, Tomisawa teaches using an audio device input (microphone 46) along with other vehicle condition inputs for controlling noise. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the combination of Stankewitz and Schubert per the teachings of Tomisawa and include a microphone for receiving the ambient noise level for the purpose of improving the noise suppression algorithm's capabilities.

Claims 23 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stankewitz in view of Schubert as applied to claim 21 above, and further in view of Venkatesh et al. The combination of Stankewitz and Schubert does not disclose that the vehicle condition inputs includes an external vehicle climate input based on weather outside the vehicle. Venkatesh discloses a volume control system. In column 2 lines 15-27, it was suggested that noise reduction using a filter in a vehicle depends on road surface and weather. Therefore Venkatesh discloses a vehicle input for a noise reduction algorithm can be based on an external vehicle climate input. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the combination of Stankewitz and Schubert by implementing an external climate condition input which is based on weather outside of the vehicle (as taught by Venkatesh) as a vehicle input to the noise suppression algorithm for the purpose of further improving the noise reduction capabilities of the hands-free unit. One would have been motivated to use external climate since it is a vehicle parameter.

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cairns in view of Schubert as applied to claim 21 above, and further in view of Grivas et al, US Patent Application Publication 2005/0130723. The combination of Cairns and Schubert does not disclose receiving the road input from a call center using a wireless carrier system. Grivas et al discloses a hands-free telephone system in vehicle 209 utilizing telematics unit 208 which communicates with communications node 204 via wireless carrier. The telematics unit 208 is coupled to telematics functionality module 250 which is coupled to a hands-free module 275, noise cancellation module 276 and other applications. A global positioning system (GPS) is integrated in the system. The telematics unit communicates with a call center (see paragraph 34). Examiner takes Official Notice that telematics units transmitted and received information from call centers for the purpose of controlling vehicle operations such as door unlocking, remote access and starting. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use a call center to transmit a road input based on GPS in the combination of Cairns and Schubert, for the purpose of modifying the noise suppression algorithm in a vehicle using telematics.

Claims 28, 30-33, 35 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cairns in view of Schubert and further in view of Grivas et al. Cairns discloses a method and apparatus of tuning a hands-free system comprising hands-free adapter 30, noise reduction control device 40, microphone array 14 and mobile unit 20. As shown in figure 3, vehicle conditions and detected and noise parameters based on vehicle conditions are used to modify a noise reduction algorithm. Therefore Cairns discloses adjusting a noise parameter for a hands-free system. Cairns does not disclose adjusting the noise parameter based on a received road

input. Schubert disclose a vibration reduction system for a vehicle comprising controller 200, vehicle control system 250 which has a positioning control system 256. Vehicle inputs such as tool usage, steering, speed, etc. are used by the controller to accomplish vibration control. Positioning control system 256 comprises positioning control circuit 300 which is coupled to GPS system 328. The global position coordinates along with geographical information from map 350 is used to generate a road input (bumpiness). As taught in column 18 lines 32-37, the vibration control system (ACS 26) changes its algorithm based on the level of bumpiness (which is a physical and mechanical condition of a vehicle). Thus, Schubert discloses adjusting a noise parameter based on a received road input and determining if the vehicle has moved onto a new road based on a GPS location. As stated above, it would have been obvious to one of ordinary skill in the art at the time of invention to implement the global positioning system and geographical information map taught by Schubert in the invention of Cairns for the purpose of improving the performance of the noise reduction control device 40 by adjusting the noise suppression algorithm based on a road input. The combination of Cairns and Schubert does not disclose that the road input is received from a call center. . Grivas et al discloses a hands-free telephone system in vehicle 209 utilizing telematics unit 208 which communicates with communications node 204 via wireless carrier. The telematics unit 208 is coupled to telematics functionality module 250 which is coupled to a hands-free module 275, noise cancellation module 276 and other applications. A global positioning system (GPS) is integrated in the system. The telematics unit communicates with a call center (see paragraph 34). Examiner takes Official Notice that telematics units transmitted and received information from call centers for the purpose of controlling vehicle operations such as door unlocking, remote access and starting.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use a call center to transmit a road input based on GPS in the combination of Cairns and Schubert, for the purpose of modifying the noise suppression algorithm in a vehicle using telematics. Claims 28, 30, 33, 35, and 36 are met. As to claims 31 and 32, Grivas discloses a GPS location system in the vehicle and it was obvious to use a call center to determine a road input based on a received GPS location and database and send that road input to the mobile vehicle for noise suppression.

Claims 29 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cairns in view of Schubert and further in view of Grivas as applied to claims 28 and 33 above, and further in view of Venkatesh et al. The combination of Cairns, Schubert, and Grivas does not disclose that the noise suppression algorithm is adjusted in response to an external vehicle climate input. Venkatesh discloses a volume control system. In column 2 lines 15-27, it was suggested that noise reduction using a filter in a vehicle depends on road surface and weather. Therefore Venkatesh discloses a vehicle input for a noise reduction algorithm can be based on an external vehicle climate input. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the combination of Cairns, Schubert, and Grivas by implementing an external climate condition input which is based on weather outside of the vehicle (as taught by Venkatesh) as a vehicle input to the noise reduction control device 40 for the purpose of further improving the noise reduction capabilities of the hands-free unit. One would have been motivated to use external climate since it relates to a physical condition of the vehicle.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian T. Pendleton whose telephone number is (571) 272-7527. The examiner can normally be reached on M-F 7-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571) 272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

btp

BRIAN TYRONE PENDLETON
PRIMARY EXAMINER